

ARGONNE NATIONAL LABORATORY

Center for Energy, Environmental & Economic Systems Analysis (CEEESA)

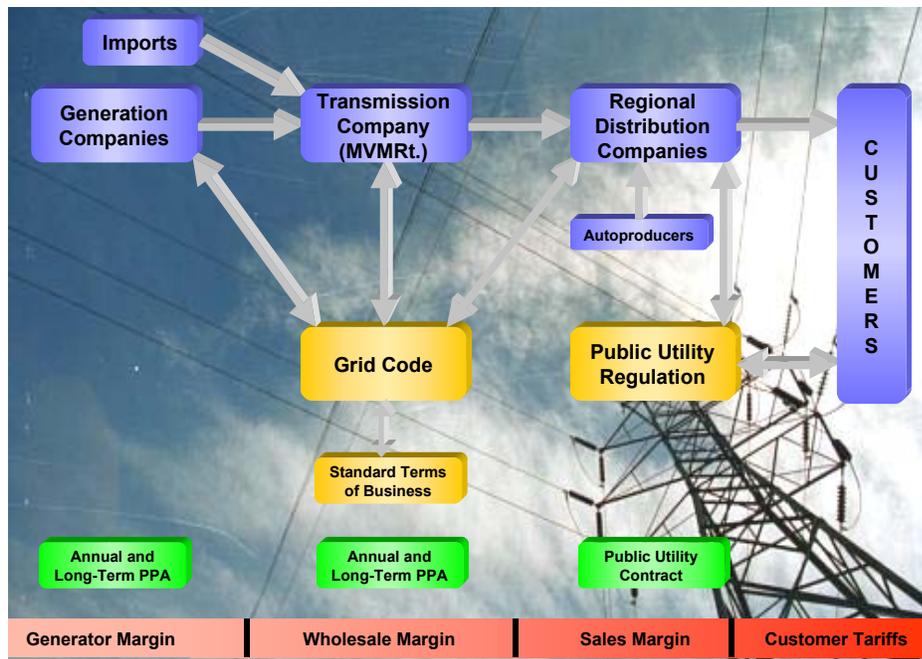
Evaluating Independent Power Producer Bids for the Hungarian Power Companies Ltd. (MVMRt.)

Opportunity: At the end of 1997, the Hungarian Power Companies Ltd. (MVMRt.) issued two tenders for bids to increase power generating capacity in Hungary. The first, covering the period from 2001 to 2003, involved 600-1,000 MWe of generating capacity using small- to medium-sized units (20-200 MWe). The second, covering the period from 2004 to 2006, was based on a total capacity of 800-1,400 MWe using greater than 200-MWe units. MVMRt. received 33 technical and financial bids to supply this new power and needed a consistent, efficient method to evaluate the bids.

Argonne Approach: Argonne's CEEESA experts teamed with a Hungarian subcontractor to develop the bid evaluation methodology and act as technical auditor to MVMRt. during the evaluation phase. CEEESA staff designed the methodology to make full use of MVMRt.'s current electric system analysis tools, which included the WASP-III Plus model within the Argonne-developed Energy and Power Evaluation Program (ENPEP). The CEEESA methodology provided a comprehensive and consistent bid evaluation framework. The use of the well-established WASP-III Plus model ensured the acceptance of the results by all bidders.

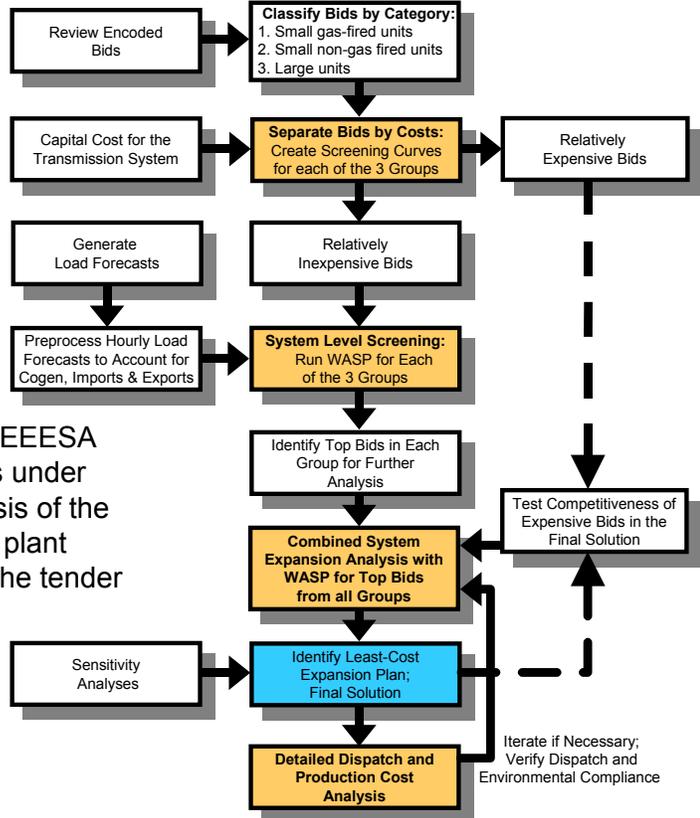


Hungary's Power Market - Operation and Regulation



Scope of Work: Each bid was encoded with a unique identification number and then grouped into three categories according to tender number, fuel type, and size. An initial pass-through identified the relatively expensive proposals in each group. CEEESA used screening curves to rank the proposals in this step. Costs included capacity and energy charges, plus any transmission costs.

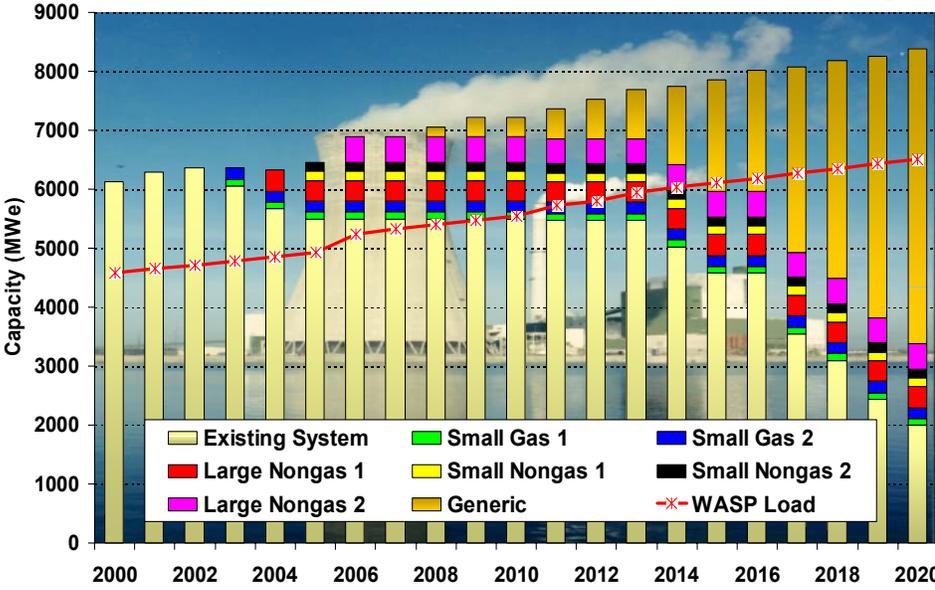
The best proposals advanced to the system-level screening with the WASP-III Plus model to determine the most economical expansion plan for Hungary's power generating system under two load forecasts. CEEESA staff identified the top bids in each of the three groups under both load forecasts and completed a combined analysis of the top bids from all three groups, taking into account the plant mix and natural gas capacity constraints specified in the tender documents. CEEESA experts transferred the preliminary results to a detailed dispatch and production cost model and identified the winning bidders when results from both models converged. CEEESA staff also performed a sensitivity analysis for such key parameters as discount rate, loss of load probability, and cost of energy-not-served.



Finally, CEEESA completed a combined analysis of the proposals that were not selected during the initial screening to test the competitiveness of these bids against those that were selected.

Results: On the basis of CEEESA's evaluation, MVMRt. signed two long-term power purchase agreements worth an estimated US\$1.3 billion. The candidates include a 191-MWe gas-fired, combined-cycle unit and a 110-MWe cogeneration combined-cycle plant. Based on 7,000 hours of annual operation, the first contract will cost 6.43 Hungarian Forint per kWh; the second will cost 6.87 Hungarian Forint per kWh.

The MVMRt. Press release about the tender can be found at <http://www.mvm.hu/angol/angkapac.html>.



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